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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,886	01/18/2000	Gale E. Smith	674506-2035.2	1236

20999 7590 12/30/2005

FROMMER LAWRENCE & HAUG
745 FIFTH AVENUE- 10TH FL.
NEW YORK, NY 10151

EXAMINER	
SRIVASTAVA, KAILASH C	
ART UNIT	**PAPER NUMBER**
1655	

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/484,886	SMITH ET AL.	
	Examiner	Art Unit	
	Dr. Kailash C. Srivastava	1655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *96 -116* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *96-116* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Your application has been re-assigned to Art Unit 1655 at the United States Patent and Trademark Office (i.e., USPTO). The assigned Examiner to your application at the USPTO is Dr. Kailash. C. Srivastava. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Examiner Kailash C. Srivastava in Art Unit 1655.

2. Applicants' Amendment filed under 37 CFR. §1.312 and MPEP §714.16 on 29 June 2005 after the Notice of Allowance mailed 29 March 2005 concurrent with payment of issue fee is acknowledged and entered.

3. In view of applicants' amendment cited *supra* the Notice of Allowance mailed 29 March 2005 is hereby withdrawn and vacated.

CLAIMS STATUS

4. Claims 1-95 and 117-126 are cancelled.

5. Claims 96-98 are amended.

6. Claims 96-116 are pending and are examined on merits.

7. In remarks filed 29 June 2005 applicants admit on record that the claimed "erythropoietin has an *in vivo* activity, however, the claimed activity of at least 200,000 U/mg or at least 500,000 U/mg was obtained during *in vitro* testing" (See Remarks, Page 7, Lines 17-24).

Claim Rejections Under 35 U.S.C. § 102

8. In view of applicants' amendment and arguments filed 29 June 2005 responding to Notice of Allowance mailed 29 March 2005 cited *supra*, following is a new rejection to Claims

96-116. The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office action.

9. Claims 96-97 and 99-116 stand rejected under 35 U.S.C. §102(b) as anticipated by Quelle et al. (Blood. 1989. Volume 74, Pgs. 652-657) with evidence provided by Dorland's Illustrated Medical Dictionary (W.B. Saunders Co., Philadelphia, 1988, Page 581).

Claims recite a glycosylated, >95% pure, recombinant erythropoietin produced by a baculovirus expression system in a cultured insect cell, wherein said erythropoietin has an activity between 200,000 U/mg to 500,000 U/mg and said erythropoietin stimulates erythropoiesis. Thus, Claims recite a glycoprotein having the properties that are discussed *supra.*

Quelle et al., teach a glycosylated, >99% pure, recombinant human erythropoietin produced by a baculovirus expression system, said expression system cultured in an insect cell, wherein said erythropoietin has an activity of 200,000 U/mg protein (Page 652, Column 1, Lines 6-25 and Column 2, Lines 6-13). Please note that erythropoiesis is an inherent activity of erythropoietin (See Dorland's Illustrated Medical Dictionary, Page 581, Column 1, Lines 38-41).

Therefore, the reference deems to anticipate the cited claim.

Please note that Dorland's Illustrated Medical Dictionary (W.B. Saunders Co., Philadelphia, 1988, Page 581) is merely to support that erythropoiesis is an inherent activity of erythropoietin and is not cited as a prior art reference.

Claim Rejections Under 35 U.S.C. § 103(a)

10. Claims 96-116 stand rejected under 35 U.S.C. §103(a) as obvious over Quelle et al. (Blood. 1989. Volume 74, Pgs. 652-657) with evidence provided by Dorland's Illustrated

Medical Dictionary (W.B. Saunders Co., Philadelphia, 1988, Page 581).

11. Quelle et al teach a similar product prepared in the same manner and having same range of activity (i.e., 200,000 U/mg to 500,000 U/mg) as disclosed in the claimed invention. Therefore, the product would intrinsically function in the same, or essentially the same manner as in the claimed invention. Instantly claimed higher purity of said erythropoietin is deemed merely a matter of judicious selection and routine optimization of a result-effective parameter, which is well within the purview of the skilled artisan. Therefore, the product disclosed in the prior at reference would intrinsically stimulate erythropoiesis even with "little in vivo activity".

The advantages of further purifying a partially-purified protein/hormone, for which receptors have been recognized and for which a use is known, provide sufficient reason to find the purified protein/hormone to have been obvious to one of ordinary skill at the time of the invention. Some of the advantages of the purification being, that purified protein/hormone: are more storage-stable; generally exhibit an increased specific activity; are amenable to amino acid sequencing which can lead to recombinant means of protein/hormone production with its accompanying savings in costs; and, allow for ready separation of reaction products as compared to separations which must account for impurities. These advantages are well known to the artisan of ordinary skill. Such knowledge may provide the suggestion to modify the explicit teachings of the relied upon reference or to combine references. See Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 297 n.24, 227 USPQ 657, 667 n.24 (Fed. Cir. 1985). The position taken is that well known purification techniques would be employed with a reasonable expectation of success in providing a purified product possessing the claimed properties. Thus,

an "obvious to try" standard is not being applied herein. See In re O'Farrell, 853 F.2d 894, 903-904, 7 USPQ2d 1673, 1681 (Fed.Cir. 1988).

One having ordinary skill in the art would have been motivated to modify the teachings from Quelle et al. according to the teachings generally known to one of ordinary skill at the time of the invention, as discussed in preceding paragraph.

The instant invention is a product-by-process. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. According to MPEP§2113, "even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior art product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (Citations omitted). In instant invention, the claimed erythropoietin product is clearly documented in the cited prior art.

Thus, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify teachings from Quelle et al. to further purify erythropoietin (i.e., EPO).

From the teachings of the reference cited supra, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was prima facie obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

12. In Claims 96-97 and 99-116 applicants have claimed "in vivo" activity for said >95% pure, homogeneous recombinant erythropoietin produced by a baculovirus expression system in cultured insect cells. Only place that applicants assert that their recombinant erythropoietin stimulates erythropoiesis is in last paragraph of Example 9 (See Page 5, Amendment and response filed December 17, 2002 as Paper Number 10). However, even in that assertion applicants have not demonstrated in vivo activity of their recombinant erythropoietin. Applicants also assert in above cited paragraph that in contrast to all recombinant erythropoietins reported in prior art literature that applicants cite, applicants' recombinant protein obtained in same way (i.e., expressed in baculovirus vector, wherein said baculovirus is cultivated in insect culture and subsequently said recombinant erythropoietin is purified) as prior literature is different than those from cited literature.

Even in the Declaration from Mannon Cox filed March 24, 2004 applicants admit on record that the claimed "erythropoietin has an *in vivo* activity, however, the claimed activity of at least 200,000 U/mg or at least 500,000 U/mg was obtained during *in vitro* testing" (See Remarks, Page 7, Lines 17-24). In absence of requested comparative data, differentiating the claimed *in vivo* erythropoietin activity to be different than the activity according to Quelle et al reference cited supra, the examiner-cited prior art deems to anticipate the instantly claimed invention.

CONCLUSION

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. For reasons aforementioned, no Claims are allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Kailash C. Srivastava whose telephone number is (571) 272-0923. The examiner can normally be reached on Monday to Thursday from 7:30 A.M. to 6:00 P.M. (Eastern Standard or Daylight Savings Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Terry McKelvey, can be reached on (571)-272-0775 Monday through Friday 8:30 A.M. to 5:00 P.M. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding may be obtained from the Patent Application Information Retrieval (i.e., PAIR) system. Status information for the published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (i.e., EBC) at: (866)-217-9197 (toll-free). Alternatively, status inquiries should be directed to the receptionist whose telephone number is (703) 308-0196.

Kailash C. Srivastava, Ph.D.
Patent Examiner
Art Unit 1655
(571) 272-0923

December 12, 2005

JON WEBER
SUPERVISORY PATENT EXAMINER